

Having answered the first series of questions, Chapter 7 will then proceed to consider issues of spectrum utilization. Is enough additional spectrum available to accommodate all existing licensees? If not, what is an acceptable accommodation percentage? Must any new ATV system respect existing NTSC coverage contours? If yes, what D/U does that imply? If no, what new contours are acceptable? How does the new coverage pattern change the existing concept of markets or ADIs? What impact will the new definition have on the number of viewers, and on spot rates, the true bottom line for a broadcaster. Must some systems be eliminated from further consideration because they cannot be broadcast with sufficient power to maintain current contours without adversely affecting adjacent or co-channel ATV stations, or existing NTSC stations? This kind of information is clearly critical to help the FCC make a decision, and important for the industry.

Economics are also critically important, to the broadcasters, alternative media, receiver manufacturers, and consumers. No system will be accepted, regardless of the signal quality transmitted, if reasonably priced receivers cannot be manufactured or TV stations cannot afford the necessary production and transmission equipment. These issues, as well as scenarios for projected receiver penetration rates at various prices and consumer willingness-to-pay information (if any is available) will be discussed in this section of Chapter 7.

The last section of Chapter 7 deals with issues of technology. In particular, section 7.4.1 requires some explanation. SS/WP4 intends to discuss some very amorphous matters. Picture and sound quality are certainly part of the total viewing experience, as is sound image, the number and psychoacoustic arrangement of the sound channels and their relationship to the video. Artifacts, or freedom from them, also contribute to the experience, as does the availability of ancillary services. There are other factors as well, but the point of this section is to try to understand whether, after paying a substantial amount of money for an ATV system, consumers will be happy with the result.

Chapter 8 contains the analysis of the actual system test data. The word "system" in the title underscores this fact. While Chapter 7 discusses issues relevant to all systems, Chapter 8 takes a different, but equally important, perspective. It looks simultaneously at all the information collected about a single system. The system data is grouped into the same categories as were explored in Chapter 7. The yardstick created is then used to judge system performance. A very practical benefit of this approach is that each section of Chapter 8 can be written in a pipeline fashion as the test data becomes available.

After all the groundwork is completed, Chapter 9 gets to the very heart of the matter, the recommendation and its rationale. The real-world constraints and considerations of what is important are described in Chapter 7 and the systems in Chapter 8. Hopefully, by comparing the two, a course of action will be clear.

Comparative analyses of the systems will be heavily based on differences among the systems. If there are insignificant differences, that information will be given in the report, but it will not be part of the selection process. The analyses will be performed with respect to the individual issues raised in Chapter 7. If different systems excel in different areas, with respect to the Chapter 7 issues, it will be necessary to determine the relative importance of each of the issues.

The Scope of Activity given to the Systems Subcommittee states in part, "Recommend advanced television system(s) now under development as candidate(s) for implementation, or specify the design of an appropriate system." Specifying the design of an appropriate system may offer the best system, but risk and delay are introduced by such an approach. The job of SS/WP4 will be greatly simplified if any one proponent's system closely matches the critical objectives that are viewed as desirable features of an ATV service.

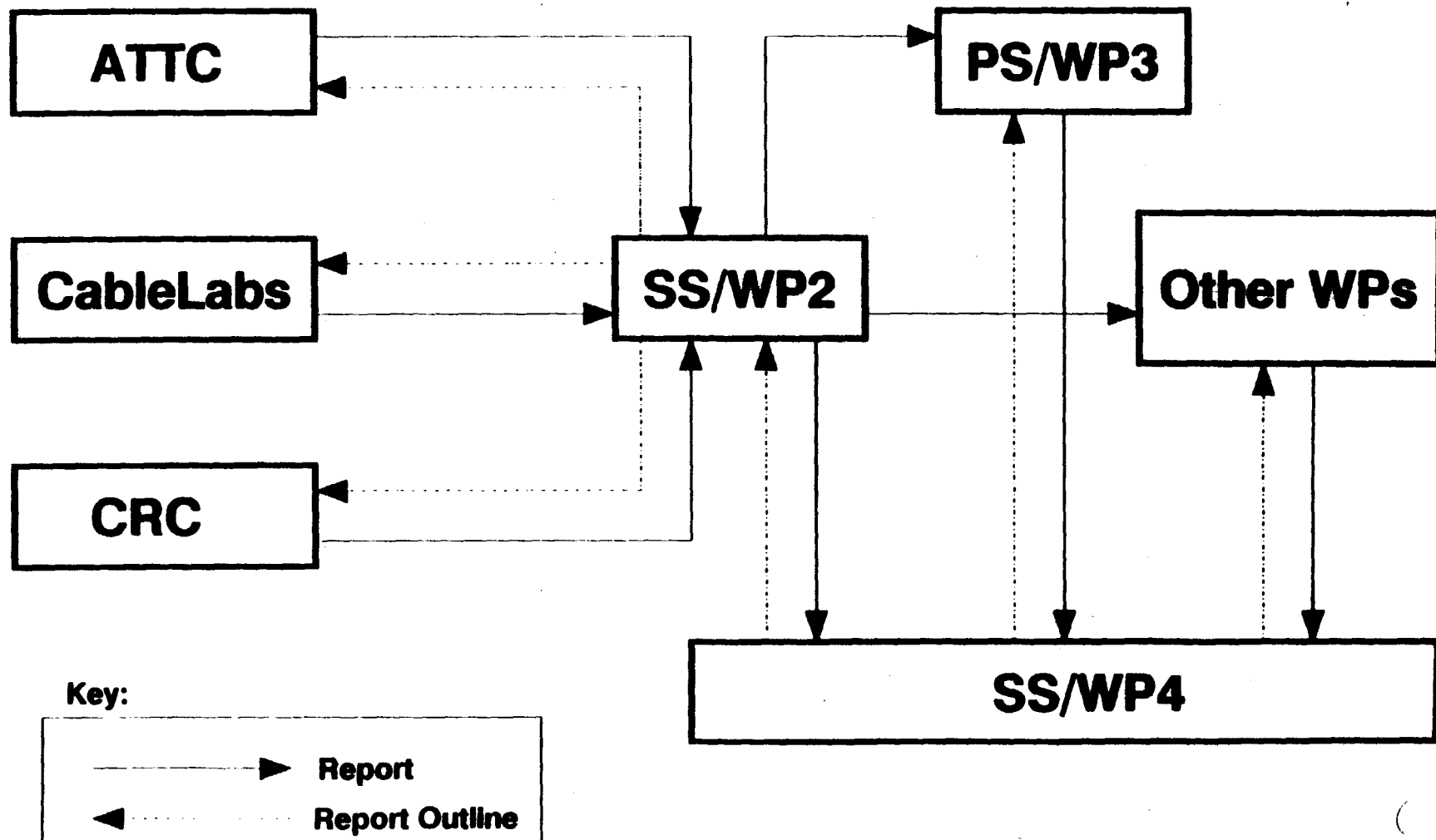
Once a recommendation is made, the next step is to help assure its adoption by developing an implementation plan. This is the subject of Chapter 10.

Chapter 11 is entitled "Future Work". For example, SS/WP4 has agreed that it will not be writing a standard in the manner of standards committees. That will be left, as necessary, to others. Suggestions for further work which should be done and how those tasks might be accomplished will be placed in this chapter.

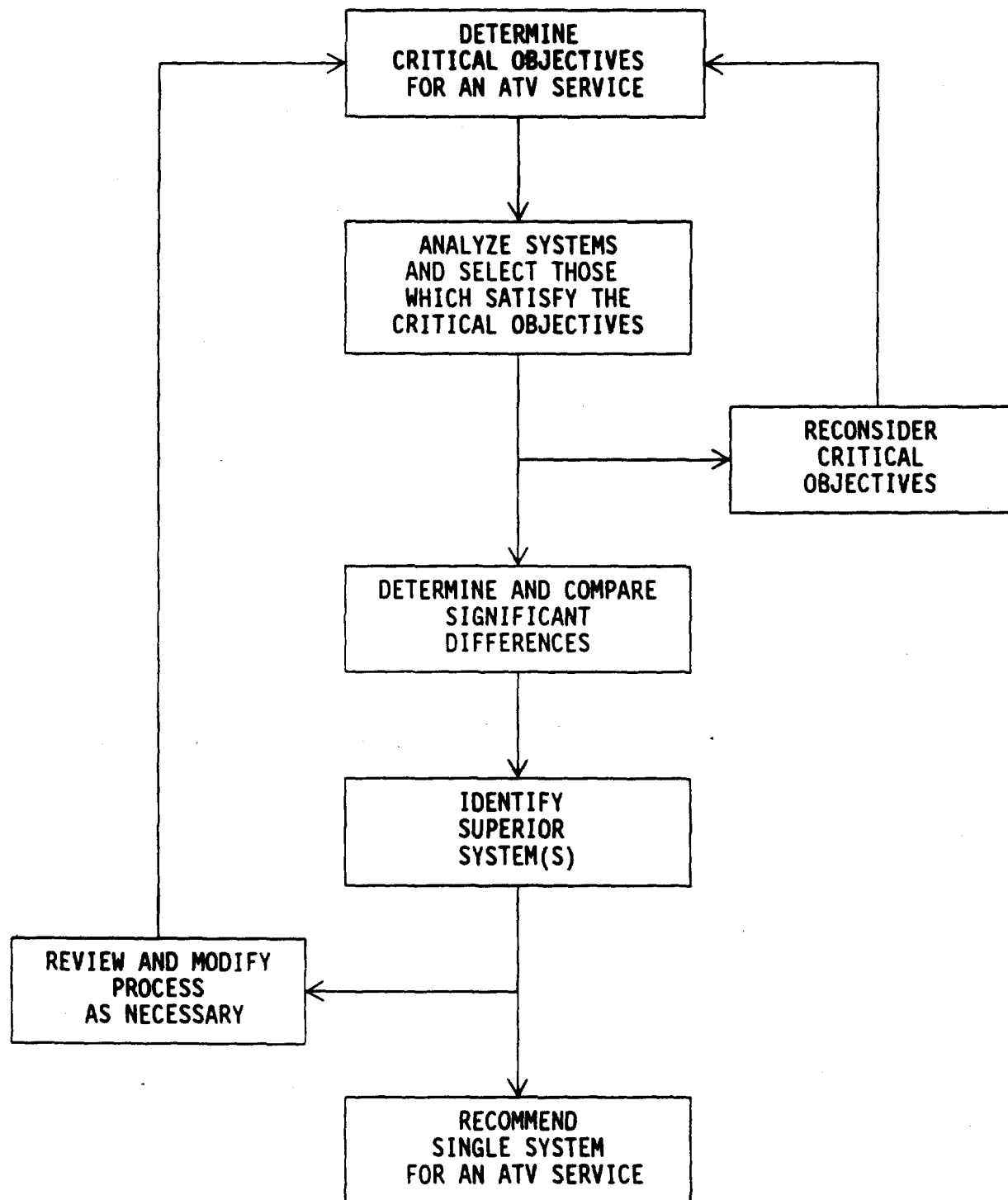
Chapter 12 will contain any additional conclusions. The remainder of the chapters are self-explanatory.

Information Flow

In the Advisory Committee



SS/WP4 SELECTION PROCESS



APPENDIX V

SS/WP4 Documents

SS/WP4-0000 (Current Document Index)

SS/WP4-0002 (Current Membership List)

SS/WP4-0026 - SS/WP4-0051 (Documents Released Since the Third
Interim Report)

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SYSTEMS SUBCOMMITTEE
WORKING PARTY ON SYSTEM STANDARDS (SS/WP4)

DOCUMENT INDEX

<u>NUMBER</u>	<u>DATE</u>	<u>DOCUMENT TITLE</u>
SS/WP4-0000		SS/WP4 Document Index
SS/WP4-0001	17 Jan 89	SS/WP4 Charter
SS/WP4-0002		SS/WP4 Membership List
SS/WP4-0003	12 Oct 88	Record of Officers Meeting, October 12, 1988
SS/WP4-0004	13 Jan 89	Voting Procedure, Letter, Tingley to Hopkins
SS/WP4-0005	17 Jan 89	Comments on Doc. SS/WP4-0003, NBC
SS/WP4-0006	17 Jan 89	Suggested Tenets & Criteria for the Selection of ATV Emission Formats, CABSC
SS/WP4-0007	17 Jan 89	Minutes of the First Meeting, January 17, 1989
SS/WP4-0008	23 Feb 89	Progress Report (Submission for the Second Interim Report)
SS/WP4-0009	27 Feb 89	Voting Procedures, SMPTE
SS/WP4-0010	27 Feb 89	ATV Standards, Letter, Engel to Hopkins
SS/WP4-0011	05 Apr 89	ATV Standards, Letter, Lum to Hopkins
SS/WP4-0012	07 Apr 89	ATV Standards, Letter, Rau to Engel
SS/WP4-0013	11 Apr 89	ATV Standards, Letter, Rau to Hopkins
SS/WP4-0014	11 Apr 89	Minutes of the Second Meeting, April 11, 1989
SS/WP4-0015	31 May 89	ATV System Models
SS/WP4-0016	27 Jun 89	ATV System Models, Letter, Lechner to Hopkins
SS/WP4-0017	27 Jun 89	Decision Process, Letter, Lum to Hopkins
SS/WP4-0018	30 Jun 89	ATV System Model, Letter, Chouinard to Hopkins
SS/WP4-0019	12 Jul 89	ATV System Models
SS/WP4-0020	12 Jul 89	Minutes of the Third Meeting, July 12, 1989
SS/WP4-0021	07 Aug 89	One View of the Standards-Recommendation Process, DePriest
SS/WP4-0022	15 Sep 89	Broadcast Technical Standards Development, Tingley
SS/WP4-0023	27 Sep 89	Proposed Process for the Evaluation of ATV System Candidates, Wohlford
SS/WP4-0024	27 Nov 89	Minutes of the Fourth Meeting, November 27, 1989
SS/WP4-0025	14 Dec 89	Progress Report (Submission for the Third Interim Report)
SS/WP4-0026	19 Apr 90	Art Colletta Presentation
SS/WP4-0027	19 Apr 90	Letter, William Nicholls to Robert Hopkins

SS/WP4-0028	19 Apr 90	Minutes of the Fifth Meeting, April 19, 1990
SS/WP4-0029	22 Jan 91	Task Force on Report Drafting, Outline of Final Report of SS/WP4
SS/WP4-0030	14 Jun 90	Task Force on Data Format, Preliminary Report on Data Prioritization
SS/WP4-0031	14 Jun 90	Letter, Lechner to Hopkins
SS/WP4-0032	09 Sep 90	Task Force on Report Drafting, Advisory Committee Schedule
SS/WP4-0033	14 Jun 90	Minutes of the Sixth Meeting, June 14, 1990
SS/WP4-0034	10 Aug 90	Task Force on Data Format, Classification of Test Factors
SS/WP4-0035	06 Aug 90	Status Report of the Task Force on Report Drafting
SS/WP4-0036	06 Aug 90	Task Force on the Recommendation Method, List of Points of Agreement
SS/WP4-0037	25 Oct 90	Minutes of the Seventh Meeting, August 10, 1990
SS/WP4-0038	19 Oct 90	Status Report of the Task Force on Report Drafting
SS/WP4-0039	22 Oct 90	Status Report of the Task Force on Data Format
SS/WP4-0040	25 Oct 90	Status Report of the Task Force on the Recommendation Method
SS/WP4-0041	30 Jul 90	Letter, the Caption Center to Richard Wiley
SS/WP4-0042	11 Sep 90	Letters, Irwin Dorros to Richard Wiley, Richard Wiley to Irwin Dorros, Jerry Pearlman to Richard Wiley
SS/WP4-0043	19 Sep 90	Letter, Richard Wiley to Robert Hopkins
SS/WP4-0044	20 Sep 90	Letter, Gregory Theus to Robert Hopkins
SS/WP4-0045	03 Oct 90	PS/WP3 Statement on Spectrum Criteria
SS/WP4-0046	25 Oct 90	View Graphs to Accompany Doc SS/WP4-0045
SS/WP4-0047	25 Oct 90	Minutes of the Eighth Meeting, October 25, 1990
SS/WP4-0048	16 Jan 91	Letter, Bruce Sidran to Robert Hopkins
SS/WP4-0049	22 Jan 91	Information Flow in the Advisory Committee
SS/WP4-0050	25 Jan 91	Status Report of the Task Force on Data Format
SS/WP4-0051	25 Jan 91	Minutes of the Ninth Meeting, January 25, 1991
SS/WP4-0052	20 Feb 91	Progress Report (Submission for the Fourth Interim Report)

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XIV. WORKSHOP CONSIDERATIONS

- A. IDENTIFICATION OF SACRED COWS**
- B. ENCOURAGE OBJECTIVITY**
- C. ENCOURAGE DECISIONS BY TEAM CONSENSUS**
- D. IDENTIFY EVALUATION CRITERIA**
- E. INCLUDE ECONOMIC/TECHNICAL/POLITICAL?**
- F. CONSUMER ACCEPTANCE ... IE COST**
- G. LIFE CYCLE POSITION OF THE TECHNOLOGY**
- H. FLEXIBILITY FOR APPLICATIONS BEYOND ENTERTAINMENT**

XV. WORKSHOP

- A. PREPARATION**
 - 1. WHAT IS THE PROBLEM WE ARE ABOUT TO DISCUSS?**
 - 2. WHY IS THIS A PROBLEM?**
 - 3. WHY DOES IT HAVE TO BE SOLVED?**
- B. OBJECTIVES**
 - 1. DEVELOP A BASELINE FUNCTION MODEL OF A GENERIC HDTV**
 - 2. DEVELOP A COMPARATIVE EVALUATION RANKING OF CANDIDATE STANDARDS AGAINST EACH FUNCTION OF THE BASELINE MODEL**
 - 3. PREPARE A REPORT OF FINDINGS AND RECOMMEND WHAT ACTION SHOULD FOLLOW**

XVI. PROPOSAL UNIQUE APPROACH

- A. FACILITATORS ARE TRAINED TO LEAD AND BE OBJECTIVE**
 - 1. NOT INFLUENCED BY FINANCIAL CONCERNS**
 - 2. NOT INFLUENCED BY TECHNICAL IMPLICATIONS**
- B. IF PARTICIPANTS AGREE TO COME TO THE TABLE**
 - 1. WE HAVE THE METHODOLOGY**
 - 2. TO RESOLVE THE OPPORTUNITY**
- C. THE FUNCTION MODEL IS KEY TO THE EVALUATION APPROACH**
- D. FUNCTION ANALYSIS SYSTEM TECHNIQUE IS KEY TO MODEL DEVELOPMENT**

XVII. JJK SPECIFIC EXPERIENCE

- A. NEW PRODUCT DEVELOPMENT**
- B. PRODUCT COST IMPROVEMENT**
- C. PLANT RELOCATION**
- D. BUSINESS METHODS/ORGANIZATION**
- E. INDUSTRIAL TECHNOLOGY MODERNIZATION**
- F. DEFENSE INDUSTRY**
- G. COMMERCIAL INDUSTRY**
- H. ELECTRONICS**
- I. AEROSPACE**
- J. COMMUNICATIONS**
- K. CONSTRUCTION**

VI. WHAT IS FUNCTION? WHAT IS ACTIVITY?

FUNCTION: AN INTENT OF PURPOSE THAT THE PRODUCT OR SERVICE IS EXPECTED TO PERFORM.

FUNCTIONS ARE DESCRIBED USING TWO WORDS; AN ACTIVE VERB AND A MEASURABLE NOUN.

ACTIVITY: THE ACTIONS REQUIRED TO PERFORM A FUNCTION

VII. FAST: FUNDING GATES IN NEW PRODUCT DEVELOPMENT (FAST MODEL)

VIII. PRELIMINARY DESIGN, FUNCTION FLOW (FAST MODEL)

IX. INITIATE PRELIMINARY DESIGN, FUNCTION FLOW (FAST MODEL)

X. ITM FACTORY MODEL, RESPONSIBILITY MATRIX (FAST MODEL)

XI. CHARTER OF THE WORKING PARTY ON SYSTEM STANDARDS (WPSS)

THE WPSS SHALL RECOMMEND STANDARDS FOR THE TRANSMISSION OF ATV BASED ON INFORMATION SUPPLIED BY ANY AND ALL OTHER WORKING PARTIES OF THE ADVISORY COMMITTEE.

XII. METHODOLOGY

- A. APPLY FAST FOR FUNCTION MODEL DEVELOPMENT
- B. IDENTIFY BASIC REQUIREMENTS OF GENERIC IDEAL SYSTEM
- C. IDENTIFY GENERIC FUNCTIONS OF THE IDEAL STANDARD HDTV
- D. COMPARE CANDIDATE STANDARDS AGAINST THE IDEAL/
- E. OTHER CANDIDATE CRITERIA FOR ASSESSMENT/COMPARISON
 - 1. COST AND TIME TO DEVELOP
 - 2. POSITION OF ASSOCIATED TECHNOLOGY IN ITS LIFE CYCLE
 - 3. REQUIREMENT FOR CONCURRENT DEVELOPMENT
 - 4. ADVANTAGE OF ASSOCIATED TECHNOLOGY LEAPS

XIII. FAST MODEL, HDTV @ HIGH LEVEL OF ABSTRACTION

- A. PRODUCE SUBJECT
- B. RECORD ACTION
- C. TRANSMIT VIDEO
- D. RECEIVE TRANSMISSION
- E. PROCESS SIGNAL
- F. DISPLAY VIDEO
- G. OBSERVE DISPLAY

J.J. KAUFMAN ASSOCIATES, INC.
VALUE MANAGEMENT SERVICES

SS/WP4-0026
19 APR 1990

ARTHUR P. COLETTA, CVS
8308 Lando Court
Gaithersburg, MD 20879
(301) 990-0231

June 22, 1990

Advanced Television Systems Committee
1776 K Street NW Suite 300
Washington, DC 20006

Attention: Dr. R. Hopkins, Executive Director

Dear Dr. Hopkins,

Enclosed you will find an outline and one (1) hard-copy set of the overhead slides I used for my presentation to the working committee on 19 April.

Thank you for the opportunity to present the FAST approach to you and to the committee. Should you feel additional effort is required I am sure an appropriate arrangement can be made.

Sincerely,

Arthur P. Coletta, CVS

**APPLICATION
OF
FUNCTION ANALYSIS
SYSTEM TECHNIQUE
TO
SELECT STANDARDS
FOR TRANSMISSION OF ATV**

**Presented to the
Working Party on System Standards**

by

Arthur P. Coletta, CVS

on

19 April 1990



J.J. KAUFMAN ASSOCIATES, INC.
VALUE MANAGEMENT SERVICES

**APPLICATION
OF
FUNCTION ANALYSIS SYSTEM TECHNIQUE
TO
SELECT STANDARDS
FOR TRANSMISSION OF ATV**

ARTHUR P. COLETTA, CVS

I. A VALUE MANAGEMENT DEFINITION

Value Management is an organized effort directed at analyzing the functions of goods and services to achieve those necessary functions and essential characteristics in the most profitable manner.

II. THE CROWD VS THE TEAM WITH A METHOD

III. DISCUSSION OBJECTIVES

- A. WHAT IS FAST?
- B. WHAT MAKES IT UNIQUE?
- C. HOW CAN IT MAKE MY JOB EASIER?
- D. WHAT ARE CANDIDATE APPLICATIONS?
- E. HOW WOULD I START FASTING?
- F. WAR STORIES?

IV. WHAT IS FAST?

FUNCTION ANALYSIS SYSTEM TECHNIQUE

FAST IS A UNIQUE, DISCIPLINED METHODOLOGY TO IDENTIFY,
DEPICT AND ANALYZE FUNCTIONS & FUNCTION RELATIONSHIPS

V. WHAT MAKES FAST UNIQUE?

- A. PROCESS OF ANALYSIS INCREASES UNDERSTANDING
 - 1. FAST ACCELERATES LEARNING
 - a) VERB-NOUN FUNCTION IDENTIFICATION
 - 1) EXPOSES WHAT EACH FUNCTION REALLY DOES
 - 2) INCREASES UNDERSTANDING
 - b) HOW-WHY QUESTION FOR EACH FUNCTION
 - 1) WHY IS THE FUNCTION NEEDED?
 - 2) HOW IS THE FUNCTION PERFORMED?
 - 3) EXPOSE FUNCTION ANOMALIES
 - 2. LINK DEPENDENCY ON OTHER FUNCTIONS
- B. DEVELOP SENSITIVITY MATRICES
 - 1. RESPONSIBILITY
 - 2. COST
 - 3. CUSTOMER ACCEPTANCE

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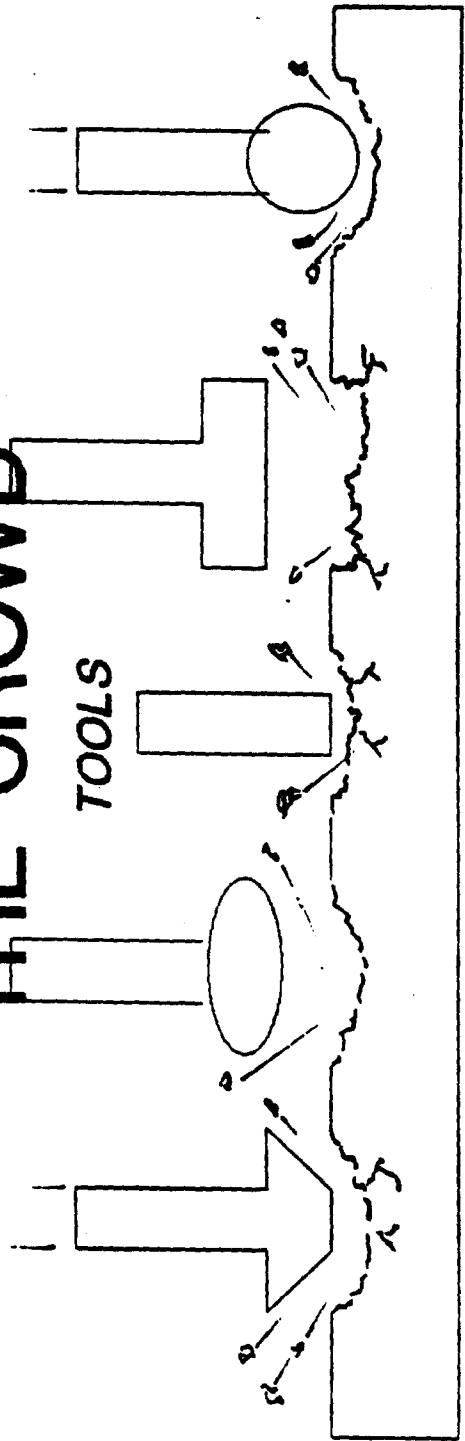
J.J. KAUFMAN ASSOCIATES, INC.
VALUE MANAGEMENT SERVICES

A VALUE MANAGEMENT DEFINITION

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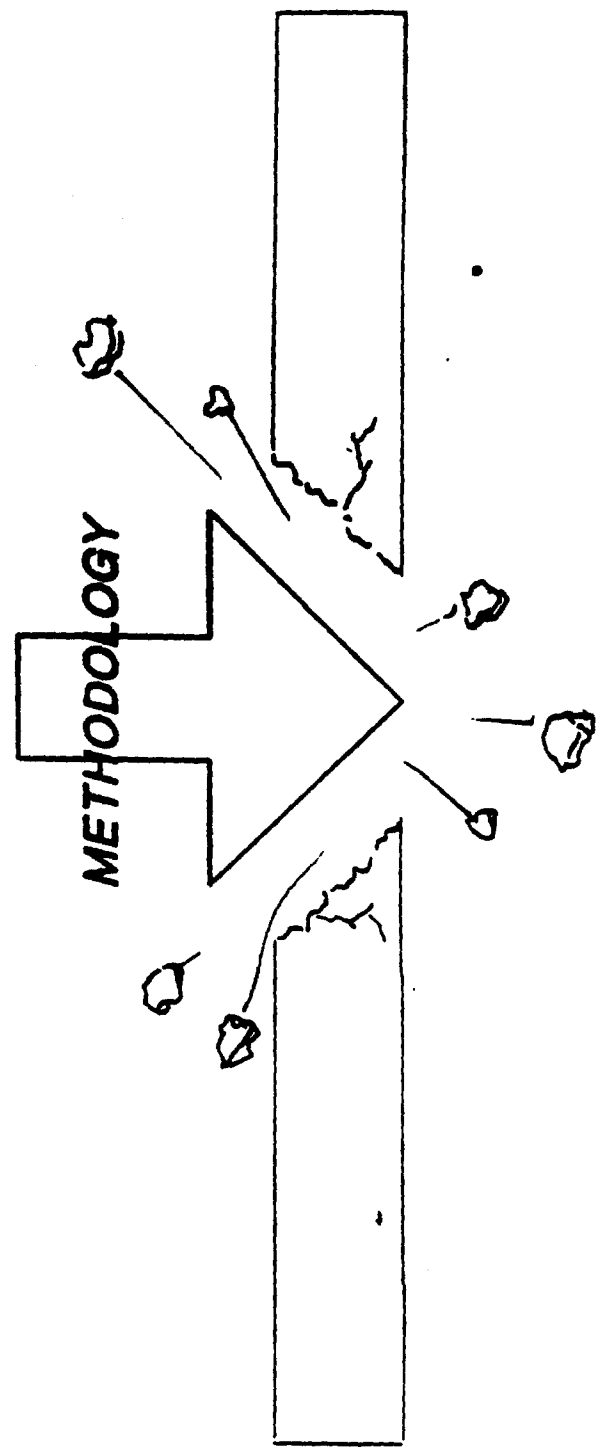
THE CROWD

TOOLS



THE TEAM

METHODOLOGY



DISCUSSION OBJECTIVES

WHAT IS FAST?

WHAT MAKES IT UNIQUE?

HOW CAN IT MAKE MY LIFE EASIER?

WHAT ARE CANDIDATE APPLICATIONS?

HOW WOULD I START FASTING?

HOW DO WE UNCOVER AREAS FOR
POTENTIAL IMPROVEMENT?

WAR

STORIES